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Attorney Docket No.: FUJO 19.465 (100794-00192)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

Appellant(s)	:	Atsushi KANAGAWA
Serial No.	:	10/080,977
Filed	:	February 21, 2002
Title	:	MOBILE COMMUNICATION SYSTEM
Examiner	:	Khawar Iqbal
Group Art Unit	:	2617

November 3, 2006

BRIEF FOR APPELLANT

Board of Patent Appeals and Interferences
Assistant Commissioner for Patents
Washington, D.C., 20231

Sir:

A Notice of Appeal was filed on August 3, 2006. Appellant hereby petitions for a one-month extension of time, a petition pursuant to 37 C.F.R. 1.136(a) and authorization to charge the requisite fee being enclosed. Appellant hereby appeals to the Board of Patent Appeals and Interferences from the Examiner's Decision, in the Official Action dated April 7, 2006, finally

rejecting claims 1-13 and 19. All requisite fees, including those for this Brief set forth in 37 C.F.R. §41.20(b)(2), may be charged to Deposit Account No. 50-1290.

(i) Real party in interest

The real party in interest is Fujitsu Limited, a Japanese corporation with offices at 1-1, Kamikodaka 4-chome, Nakahara-Ku, Kawasaki-shi, Kanagawa 211-8588, Japan, to which Appellant has assigned all interest in, to and under this application, by virtue of an assignment as recorded at Reel 012637, Frame 0974 of the Assignment records of the U.S. Patent and Trademark Office.

(ii) Related appeals and interferences

Upon information and belief, there are no other appeals or interferences, which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

(iii) Status of claims

The application was filed on February 21, 2002, and claims the benefit of earlier filing date under 35 U.S.C. §§ 120 and 363 as a continuation application of International Application No. PCT/JP99/05389 filed on September 30, 1999. The application was filed with claims 1-19.

In a first Office Action dated August 26, 2004, claims 14-16 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,111,864 to Kabasawa ('864); claim 17 was rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,728,528 to Loke; and claims 1-13 and 18-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Loke in view of U.S. Patent No. 5,790,528 to Muszynski.

In a response to the first Office Action, filed December 23, 2004, Appellant amended claims 1, 8, 12, 14-15, 17, and 19.

In a final Office Action dated February 7, 2005, claims 1-13, 16-17, and 19 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,901,145 to Sawyer; and claims 14-15 and 18 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,987,013 to Kabasawa ('013).

In a response to the final Office Action filed on May 9, 2005, Appellant amended claims 1, 8, 11, 17, and 19.

In an Advisory Action dated June 2, 2005, the Examiner refused to enter the amendments to claims 1, 8, 11, 17, and 19 in Appellant's May 9, 2005 response for raising new issues that would require further consideration and/or search.

Appellant filed a Request for Continued Examination ("RCE") on July 8, 2005.

In an Office Action dated August 24, 2005, the Examiner issued a restriction requirement.

In a response to the Office Action that was filed on September 14, 2005, Appellant elected claims 1-12 for prosecution.

In a non-final Office Action dated November 14, 2005, the Examiner corrected the restriction requirement and maintained claims 1-13 and 19 for prosecution. Claims 14-18 were withdrawn from consideration. In the Office Action, claim 12 was rejected under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter of the invention; claim 11 was rejected under 35 U.S.C. § 102(b) as being anticipated by Muszynski; claim 19 was rejected under 35 U.S.C. § 102(e) as being anticipated by Sawyer;

claims 1-10 and 12-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sawyer in view of U.S. Patent No. 6,289,221 to Ritter.

In a response to the Office Action filed on February 14, 2006, Appellant amended claims 1, 8, 11-12, and 19.

In a final Office Action dated April 7, 2006, claims 1-13 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sawyer in view of Ritter.

The status of the claims as set out in the final Office Action is:

Claims allowed: None

Claims objected to: None

Claims rejected: 1-13 and 19

The rejected claims are set out in the Appendix attached hereto.

The rejected claims are being appealed.

(iv) Status of amendments

Appellant's response filed on February 14, 2006, proffered before final rejection, has been considered. Appellant amended claims 1, 8, 11-12, and 19. Appellant did not otherwise cancel or amend any of the claims that are the subject of this appeal.

(v) Summary of claimed subject matter

A mobile station in a cellular communications system often moves from one cell to another cell while communicating with another communications terminal. A transition from a

state where a mobile station is accommodated in a base station device into a state where the mobile station is accommodated in another base station device, when the mobile station moves from a cell to another cell, is called "hand-off" (or "hand-over").

A hand-off operation is largely classified into two categories: a "soft hand-off" and a "hard hand-off". In the soft hand-off, even when moving from one cell to another cell, a mobile station is always connected to at least one base station device. Therefore, in the soft hand-off, a channel between the mobile station and base station device is never disconnected, and, accordingly, communications are never interrupted. The soft hand-off occurs if a mobile station moves between cells that are controlled by the same base station controller and if the same frequency can be allocated.

In the hard hand-off, when moving from one cell to another cell, the mobile station is temporarily disconnected from the base station device and then is connected to another base station device. In this case, synchronization must be established again between the mobile station and the base station device. Thus, in the hard hand-off, a channel between a mobile station and a base station device is temporarily disconnected and, accordingly, communications are interrupted. Therefore, a user is often disconcerted. The hard hand-off occurs when a mobile station moves between cells each of which is controlled by a different base station controller. In other words, the hard hand-off occurs when a mobile station crosses an "accommodation boundary". The hard hand-off also occurs when a mobile station moves between cells, to each of which a different frequency is allocated.

An object of the present invention is to reduce the occurrence of hard hand-offs in a mobile communications system.

The present invention provides for a mobile communications system in which first and second frequencies are allocated to each wireless communications area. In one embodiment, the system comprises a first base station (provided in a first wireless communications area), a second base station (provided in a second wireless communications area), a third base station (in a third wireless communications area adjacent to the first and second wireless communications areas), a first controller, and a second controller. The first controller controls the first base station device using the first and second frequencies and controls communications conducted by the third base station device using the first frequency but does not control communications conducted by the third base station device using the second frequency. Correspondingly, the second controller controls the second base station device using the first and second frequencies and controls communications conducted by the third base station device using the second frequency but does not control communications conducted by the third base station device using the first frequency.

In one embodiment, the present invention provides "[a] mobile communications system in which first and second frequencies are allocated to each wireless communications area [Fig. 4, 'two frequencies (RF#1 and RF#2) are allocated to each cell,' page 13, lines 18-19 of the specification], comprising:

a first base station device provided in a first wireless communications area ['BTS#A 31,' Fig. 4, page 14, lines 3-5 of the specification];

a second base station device provided in a second wireless communications area ['BTS#B 32,' Fig. 4, page 14, lines 3-5 of the specification];

a third base station device provided in a third wireless communications area adjacent to the first and second wireless communications areas ['BTS#C 33,' Fig. 4, page 14, lines 14-15 of the specification];

a first base station controller controlling communications conducted by said first base station device and said third base station device ['BSC#1 21,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification]; and

a second base station controller controlling communications conducted by said second base station device and said third base station device ['BSC#2 22,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification], wherein

each of said first, second and third base station devices can use both of the first and second frequencies to communicate with a mobile station ['BTS#A 31, BTS#B 32, BTS#C 33, RF#1, and RF#2,' Fig. 4, page 14, line 3 to page 15, line 5 of the specification],

said first base station controller controls communications conducted by said first base station device using the first frequency and the second frequency and controls communications conducted by said third base station device using the first frequency but does not control communications conducted by said third base station device using the second frequency ['BSC#1 21,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification],

said second base station controller controls communications conducted by said second base station device using the first frequency and the second frequency and controls communications conducted by said third base station device using the second frequency but does not control communications conducted by said third base station device using the first frequency ['BSC#2 22,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification], and

said first base station controller allocates the same frequency to a radio channel between a mobile station and a corresponding base station device before and after the mobile station travels from the first wireless communications area to the third wireless communications area in a case where the mobile station has used the first frequency in the first wireless communications area

['step S6,' Fig. 6, page 20, lines 14-20 of the specification], and allocates the first frequency to the radio channel after the mobile station travels from the third wireless communications area to the first wireless communications area ['states (4)-(6),' Fig. 5, page 17, lines 8-21 of the specification; 'steps S4-S6,' Fig. 6, page 19, line 24 to page 20, line 20 of the specification]," as recited in claim 1. (Underlining added for emphasis)

Rejected claims 2-7 depend from claim 1, and are patentable over the references cited against them for at least the same reasons, as discussed in section (vii).

The present invention also provides "[a] mobile communications system, comprising:

a first base station device provided in a first wireless communications area to which at least a first frequency is allocated ['BTS#A 31,' Fig. 4, page 14, lines 3-13 of the specification];

a second base station device provided in a second wireless communications area to which at least a second frequency is allocated ['BTS#B 32,' Fig. 4, page 14, lines 3-13 of the specification];

a third base station device provided in a third wireless communications area, which is adjacent to the first and second wireless communications areas and to which the first and second frequencies are allocated ['BTS#C 33,' Fig. 4, page 14, lines 14 to page 15, line 5 of the specification];

a first base station controller controlling communications conducted by said first base station device and said third base station device ['BSC#1 21,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification]; and

a second base station controller controlling communications conducted by said second base station device and said third base station device ['BSC#2 22,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification], wherein

each of said first, second and third base station devices can use both of the first and second frequencies to communicate with a mobile station ['BTS#A 31, BTS#B 32, BTS#C 33, RF#1, and RF#2,' Fig. 4, page 14, line 3 to page 15, line 5 of the specification],

said first base station controller controls communications conducted by said first base station device using the first frequency and the second frequency and controls communications conducted by said third base station device using the first frequency but does not control communications conducted by said third base station device using the second frequency ['BSC#1 21,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification],

said second base station controller controls communications conducted by said second base station device using the first frequency and the second frequency and controls communications conducted by said third base station device using the second frequency but does not control communications conducted by said third base station device using the first frequency ['BSC#2 22,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification], and

said first base station controller allocates the same frequency to a radio channel between a mobile station and a corresponding base station device before and after the mobile station travels from the first wireless communications area to the third wireless communications area in a case where the mobile station has used the first frequency in the first wireless communications area ['step S6,' Fig. 6, page 20, lines 14-20 of the specification], and allocates the first frequency to the radio channel after the mobile station travels from the third wireless communications area to the first wireless communications area ['states (4)-(6),' Fig. 5, page 17, lines 8-21 of the specification; 'steps S4-S6,' Fig. 6, page 19, line 24 to page 20, line 20 of the specification]," as recited in claim 8. (Underlining added for emphasis)

Rejected claims 9-10 depend from claim 8, and are patentable over the references cited against them for at least the same reasons, as discussed in section (vii).

The present invention also provides "[a] mobile communications system, comprising:

a first base station device provided in a first wireless communications area to which at least a first frequency is allocated ['BTS#A 31,' Fig. 4, page 14, lines 3-13 of the specification];

a second base station device provided in a second wireless communications area to which at least a second frequency is allocated ['BTS#B 32,' Fig. 4, page 14, lines 3-13 of the specification];

a third base station device provided in a third wireless communications area, which is adjacent to the first and second wireless communications areas and to which the first and second frequencies are allocated for same multiple access scheme, wherein said third base station device is accommodated in different controllers for each allocated frequency ['BTS#C 33,' Fig. 4, page 14, line 14 to page 15, line 5 of the specification];

a first base station controller controlling communications conducted by said first base station device and said third base station device ['BSC#1 21,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification]; and

a second base station controller controlling communications conducted by said second base station device and said third base station device ['BSC#2 22,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification], wherein

each of said first, second and third base station devices can use both of the first and second frequencies to communicate with a mobile station ['BTS#A 31, BTS#B 32, BTS#C 33, RF#1, and RF#2,' Fig. 4, page 14, line 3 to page 15, line 5 of the specification],

said first base station controller controls communications conducted by said first base station device using the first frequency and the second frequency and controls communications conducted by said third base station device using the first frequency but does not control communications conducted by said third base station device using the second frequency ['BSC#1 21,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification],

said second base station controller controls communications conducted by said second base station device using the first frequency and the second frequency and controls communications conducted by said third base station device using the second frequency but does not control communications conducted by said third base station device using the first frequency ['BSC#2 22,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification], and

said first base station controller allocates the same frequency to a radio channel between a mobile station and a corresponding base station device before and after the mobile station travels from the first wireless communications area to the third wireless communications area in a case where the mobile station has used the first frequency in the first wireless communications area ['step S6,' Fig. 6, page 20, lines 14-20 of the specification], and allocates the first frequency to the radio channel after the mobile station travels from the third wireless communications area to the first wireless communications area ['states (4)-(6),' Fig. 5, page 17, lines 8-21 of the specification; 'steps S4-S6,' Fig. 6, page 19, line 24 to page 20, line 20 of the specification]," as recited in claim 11. (Underlining added for emphasis)

The present invention also provides "[a] mobile communications system, comprising:

a first base station conducting wireless communications using at least a first frequency ['BTS#A 31,' Fig. 4, page 14, lines 3-13 of the specification];

a second base station conducting wireless communications using at least a second frequency different from the first frequency ['BTS#B 32,' Fig. 4, page 14, lines 3-13 of the specification];

a third base station, located adjacent to said first and second base stations, conducting wireless communications using at least the first and second frequencies ['BTS#C 33,' Fig. 4, page 14, line 14 to page 15, line 5 of the specification];

a first base station controller managing at least the first frequency used in said first and third base stations and the second frequency with respect to said first base station, but does not manage the second frequency with respect to said third base station ['BSC#1 21,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification]; and

a second base station controller managing at least the second frequency used in said second and third base stations and the first frequency with respect to said second base station, but does not manage the first frequency with respect to said third base station ['BSC#2 22,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification], wherein each of said first and second base station controllers further comprises controlling means for allocating the same frequency when there is a hand-off between base station devices managed by the corresponding base station controller ['step S6,' Fig. 6, page 20, lines 14-20 of the specification]," as recited in claim 12. (Underlining added for emphasis)

Rejected claim 13 depends from claim 12, and is patentable over the references cited against it for at least the same reasons, as discussed in section (vii).

The present invention also provides "[a] communications control method in a mobile communications system including a first base station device provided in a first wireless communications area to which at least a first frequency is allocated ['BTS#A 31,' Fig. 4, page

14, lines 3-13 of the specification], a second base station device provided in a second wireless communications area to which at least a second frequency is allocated ['BTS#B 32,' Fig. 4, page 14, lines 3-13 of the specification], a third base station device provided in a third wireless communications area which is adjacent to the first and second wireless communications areas and to which the first and second frequencies are allocated ['BTS#C 33,' Fig. 4, page 14, line 14 to page 15, line 5 of the specification], a first base station controller controlling the first base station device using the first frequency ['BSC#1 21,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification] and a second base station controller controlling the second base station device using the second frequency ['BSC#2 22,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification], wherein

the first base station controller controls communications conducted by the first base station device using the first frequency and the second frequency and controls communications conducted by the third base station device using the first frequency but not controlling communications conducted by said third base station device using the second frequency ['BSC#1 21,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification],

the second base station controller controls communications conducted by the second base station device using the first frequency and the second frequency and controls the communications conducted by the third base station device using the second frequency but not controlling communications conducted by said third base station using the first frequency ['BSC#2 22,' Fig. 4, page 14, line 5 to page 15, line 5 of the specification], and

said first base station controller allocates the same frequency to a radio channel between a mobile station and a corresponding base station device before and after the mobile station travels from the first wireless communications area to the third wireless communications area in a case

where the mobile station has used the first frequency in the first wireless communications area ['step S6,' Fig. 6, page 20, lines 14-20 of the specification], and allocates the first frequency to the radio channel after the mobile station travels from the third wireless communications area to the first wireless communications area ['states (4)-(6),' Fig. 5, page 17, lines 8-21 of the specification; 'steps S4-S6,' Fig. 6, page 19, line 24 to page 20, line 20 of the specification]," as recited in claim 19. (Underlining added for emphasis)

(vi) Grounds of rejection to be reviewed on appeal

1. Whether or not claims 1-13 and 19 are unpatentable under 35 U.S.C. § 103 as being obvious in view of Sawyer and Ritter.

(vii) Argument

Issue 1: Whether or not claims 1-13 and 19 are unpatentable under 35 U.S.C. § 103 as being obvious in view of Sawyer and Ritter.

The Examiner relied upon the description of a FDMA ("frequency division multiple access") mobile switching center ("MSC") 26 and a CDMA ("code division multiple access") MSC 46 in Sawyer as alleged disclosure of the claimed first and second base station controllers for respectively controlling first and second frequency communications in the claimed third base station. The Examiner contended that the connection between FDMA MSC 26 and narrowband ("NB") base station ("BS") 18 and the connection between CDMA MSC 46 and transmitter 50 illustrated in Fig. 1 of Sawyer disclose this feature. The Examiner conceded that Sawyer fails to disclose the claimed feature of the first and second base station controllers respectively controlling both first and second frequency communications in the first and second base stations.

Indeed, as shown in Fig. 1 of Sawyer, the reference only describes the FDMA MSC 26 and CDMA MSC 46 controlling only their respective communication schemes in their own communications portions 12 and 14.

To cure this deficiency, the Examiner cited Ritter as a combining reference that allegedly discloses the feature of the first and second base station controllers respectively controlling both first and second frequency communications in the first and second base stations. In particular, the Examiner alleged that it would have been obvious to incorporate base stations having both GSM ("Global System for Mobile communications") 1 and TD/CDMA ("Time Division/Code Division Multiple Access) 2 described in Ritter to the system described in Sawyer to yield the claimed invention.

Appellant respectfully submits that it would not have been obvious to one skilled in the art at the time the claimed invention was made to combine Sawyer and Ritter in the manner proposed by the Examiner. Appellant further submits that even assuming, arguendo, that it would have been obvious to combine Sawyer and Ritter, such a combination would still have failed to disclose or suggest the claimed invention.

(a) It would not have been obvious to combine Sawyer and Ritter in the manner proposed by the Examiner.

The Examiner exercised improper hindsight from the claimed invention in combining Sawyer and Ritter in the manner proposed. Sawyer and Ritter each describe an alternative solution to the problem of accommodating different communication systems. Sawyer describes FDMA and CDMA controllers controlling their respective communication schemes in their respective cells, and incorporating CDMA pilot transmitters in FDMA cells bordering these communication systems for handoffs to the FDMA cells. And Ritter describes base stations

incorporating both second generation GSM and third generation TD/CDMA schemes. In other words, Sawyer only describes a border handoff between two disparate communications systems, and Ritter only describes base stations accommodating multiple generations of a communications system. As such, there is no motivation or suggestion to combine these references in the manner proposed by the Examiner to yield the claimed invention. Indeed, Sawyer teaches away from the Examiner's proposed combination with Ritter.

Appellant refers to In re Fritch, (23 USPQ 2d 1780-CAFC 1992) in which the Court states at page 1783:

> "'Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined *only* if there is some suggestion or incentive to do so'. Although couched in terms of combining teachings found in the prior art, the same inquiry must be carried out in the context of a purported obvious 'modification' of the prior art. The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification....It is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This court has previously stated that '[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention". (Underlining added for emphasis)

Sawyer only describes FDMA MSCs that control FDMA communications in FDMA cells and CDMA MSCs that control CDMA communications in CDMA cells. Please see Fig. 1 of Sawyer. And Sawyer describes an invention specifically addressing the issue of a mobile station crossing over between portions serviced by these different systems. Please see, e.g., col. 2, line 60 to col. 3, line 16 of Sawyer. To facilitate a handoff of a mobile station from the CDMA portion to the FDMA portion, Sawyer describes incorporating only a wideband pilot channel

transmitter in each FDMA base station bordering the CDMA portion so that mobile stations can monitor wideband pilot channel broadcast from the bordering FDMA base stations to identify target cells suitable for handoff. Please see col. 3, lines 44-60 of Sawyer. Sawyer describes the advantage of using the same FDMA antenna for transmitting the wideband pilot channel at the FDMA base stations, thus reducing the cost of implementation. Indeed, Sawyer explicitly describes implementing only the wideband pilot channel transmitter as advantageous over the more costly alternative of incorporating "a wideband receiver for receiving spread spectrum [i.e., CDMA] mobile station communications for evaluation and processing" at the FDMA base stations bordering the CDMA portion. Please see col. 3, lines 28-40 of Sawyer. Therefore, Sawyer explicitly teaches away from incorporating both CDMA and FDMA systems in base stations even just for the bordering portion of these systems as being too costly. And, thus, Sawyer only describes the distinct solution of the FDMA base stations transmitting the pilot channel broadcast so that a mobile station crossing into the FDMA portion can evaluate the broadcast for identifying target cells for handoff.

Separately, Ritter describes a frequency re-use scheme for base stations having both second generation GSM and third generation TD/CDMA systems. Please see Fig. 1 (reference numeral 1 and 2) and col. 4, line 66 to col. 5, line 13 of Ritter. Nowhere in Ritter is there any suggestion that the incorporation of both GSM and TD/CDMA systems in a base station would be applicable or practical for the CDMA-to-FDMA border handoff described in Sawyer. And since Ritter is only directed to frequency re-use for multiple generations of the same system (GSM-TD/CDMA) incorporated in all base stations, it does not disclose or suggest any improvement for handoffs between the disparate systems of FDMA and CDMA described in Sawyer. Indeed, the Examiner's application of all base stations incorporating both

communications systems described in Ritter directly contradicts the low-cost objective of including only a wideband transmitter in border FDMA base stations described in Sawyer. A fortiori, the Examiner's proposed combination/modification incorporating both FDMA and CDMA systems in a base station in the context of Sawyer would render moot the border inter-system handoff scheme described in Sawyer. There would be no reason for such inter-system handoffs when all cells accommodate all communications systems—i.e., such handoffs occur because the source or destination, or both, is limited in the system it accommodates. As such, there is not only no motivation or suggestion to combine these references in the manner proposed by the Examiner, the references explicitly teach away from such a combination.

Thus, the Examiner clearly exercised improper hindsight from the claimed invention in piecing together the disparate and contradictory features of Sawyer and Ritter for supporting the claim rejection.

(b) The combination of Sawyer and Ritter would still have failed to disclose or suggest the claimed invention even assuming such a combination would have been obvious.

Even assuming, arguendo, that it would have been obvious to one skilled in the art at the time the claimed invention was made to combine Sawyer and Ritter, such a combination would have, at most, suggested the FDMA communications portion (which Sawyer describes as including digital GSM communications on col. 1, lines 29-30) base stations incorporating multiple generations—i.e., including the TD/CDMA system described in Ritter. And as described on col. 5, lines 31-32 of Ritter, "the bandwidth of a carrier signal of a TD/C[D]MA signal is substantially less than that of a direct sequence spread spectrum CDMA system..." And thus, such a TD/CDMA system would still have been distinct from the CDMA communications

portion described in Sawyer. Or even if such a TD/CDMA system were to be the same as the CDMA communications portion described in Sawyer, the combination of references would have suggested the FDMA communications portion in Sawyer incorporating both GSM and TD/CDMA systems and the CDMA communications portion incorporating only its CDMA system.

Thus, a combination of Ritter and Sawyer would still have failed to disclose or suggest base station controllers controlling two frequencies in common in their own respective base stations and each controlling one of the two frequencies in a common base station.

In other words, a combination of Ritter and Sawyer would still have failed to disclose or suggest,

> "the first base station controller controls communications conducted by the first base station device using the first frequency and the second frequency and controls communications conducted by the third base station device using the first frequency ***but not*** controlling communications conducted by said third base station device using the second frequency
>
> the second base station controller controls communications conducted by the second base station device using the first frequency and the second frequency and controls the communications conducted by the third base station device using the second frequency ***but not*** controlling communications conducted by said third base station using the first frequency," as claimed. (Emphasis added)

Accordingly, Appellant respectfully submits that independent claims 1, 8, 11-12, and 19—each incorporating the features corresponding to those cited above—are patentable over Sawyer and Ritter for at least the foregoing reasons. And dependent claims 2-7, 9-10, and 13 are patentable over the cited references for at least the same reasons.

CONCLUSION

Claims 1-13 and 19 are not obvious in view of Sawyer and Ritter. Accordingly, it is respectfully submitted that the Examiner erred in rejecting claims 1-13 and 19 and a reversal of such rejection by this Honorable Board is solicited.

Respectfully submitted,

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(viii) **Claims Appendix**

1. A mobile communications system in which first and second frequencies are allocated to each wireless communications area, comprising:

a first base station device provided in a first wireless communications area;

a second base station device provided in a second wireless communications area;

a third base station device provided in a third wireless communications area adjacent to the first and second wireless communications areas;

a first base station controller controlling communications conducted by said first base station device and said third base station device; and

a second base station controller controlling communications conducted by said second base station device and said third base station device, wherein

each of said first, second and third base station devices can use both of the first and second frequencies to communicate with a mobile station,

said first base station controller controls communications conducted by said first base station device using the first frequency and the second frequency and controls communications conducted by said third base station device using the first frequency but does not control communications conducted by said third base station device using the second frequency,

said second base station controller controls communications conducted by said second base station device using the first frequency and the second frequency and controls communications conducted by said third base station device using the second frequency but does not control communications conducted by said third base station device using the first frequency, and

said first base station controller allocates the same frequency to a radio channel between a mobile station and a corresponding base station device before and after the mobile station travels from the first wireless communications area to the third wireless communications area in a case where the mobile station has used the first frequency in the first wireless communications area, and allocates the first frequency to the radio channel after the mobile station travels from the third wireless communications area to the first wireless communications area.

2. The mobile communications system according to claim 1, wherein when a mobile station using the first frequency in the first wireless communications area moves from the first wireless communications area to the third wireless communications area, said third base station device communicates with the mobile station using the first frequency.

3. The mobile communications system according to claim 1, wherein when a mobile station using the second frequency in the first wireless communications area moves from the first wireless communications area to the third wireless communications area, said third base station device communicates with the mobile station using the second frequency.

4. The mobile communications system according to claim 1, wherein when a mobile station using the first frequency in the third wireless communications area moves from the third wireless communications area to the first wireless communications area, said first base station device communicates with the mobile station using the first frequency.

5. The mobile communications system according to claim 1, wherein when a mobile station using the second frequency in the third wireless communications area moves from the third wireless communications area to the first wireless communications area, said first base station device communicates with the mobile station using the first frequency.

6. The mobile communications system according to claim 1, wherein said third base station device is connected to said first controller via a first transmission line and is connected to said second controller via a second transmission line.

7. The mobile communications system according to claim 1, wherein said third base station device and said second controller are connected via a physical transmission line, said second controller is connected to said first controller via a switching device, and said third base station device is accommodated in said first controller with a logical path established via said second controller and the switching device.

8. A mobile communications system, comprising:

a first base station device provided in a first wireless communications area to which at least a first frequency is allocated;

a second base station device provided in a second wireless communications area to which at least a second frequency is allocated;

a third base station device provided in a third wireless communications area, which is adjacent to the first and second wireless communications areas and to which the first and second frequencies are allocated;

a first base station controller controlling communications conducted by said first base station device and said third base station device; and

a second base station controller controlling communications conducted by said second base station device and said third base station device, wherein

each of said first, second and third base station devices can use both of the first and second frequencies to communicate with a mobile station,

said first base station controller controls communications conducted by said first base station device using the first frequency and the second frequency and controls communications conducted by said third base station device using the first frequency but does not control communications conducted by said third base station device using the second frequency,

said second base station controller controls communications conducted by said second base station device using the first frequency and the second frequency and controls communications conducted by said third base station device using the second frequency but does not control communications conducted by said third base station device using the first frequency, and

said first base station controller allocates the same frequency to a radio channel between a mobile station and a corresponding base station device before and after the mobile station travels from the first wireless communications area to the third wireless communications area in a case where the mobile station has used the first frequency in the first wireless communications area, and allocates the first frequency to the radio channel after the mobile station travels from the third wireless communications area to the first wireless communications area.

9. The mobile communications system according to claim 8, wherein when a mobile station using the first frequency in the first wireless communications area moves from the first wireless communications area to the third wireless communications area, said third base station device communicates with the mobile station using the first frequency.

10. The mobile communications system according to claim 8, wherein when a mobile station using the first frequency in the third wireless communications area moves from the third wireless communications area to the first wireless communications area, said first base station device communicates with the mobile station using the first frequency.

11. A mobile communications system, comprising:

a first base station device provided in a first wireless communications area to which at least a first frequency is allocated;

a second base station device provided in a second wireless communications area to which at least a second frequency is allocated;

a third base station device provided in a third wireless communications area, which is adjacent to the first and second wireless communications areas and to which the first and second frequencies are allocated for same multiple access scheme, wherein said third base station device is accommodated in different controllers for each allocated frequency;

a first base station controller controlling communications conducted by said first base station device and said third base station device; and

a second base station controller controlling communications conducted by said second base station device and said third base station device, wherein

each of said first, second and third base station devices can use both of the first and second frequencies to communicate with a mobile station,

said first base station controller controls communications conducted by said first base station device using the first frequency and the second frequency and controls communications conducted by said third base station device using the first frequency but does not control communications conducted by said third base station device using the second frequency,

said second base station controller controls communications conducted by said second base station device using the first frequency and the second frequency and controls communications conducted by said third base station device using the second frequency but does not control communications conducted by said third base station device using the first frequency, and

said first base station controller allocates the same frequency to a radio channel between a mobile station and a corresponding base station device before and after the mobile station travels from the first wireless communications area to the third wireless communications area in a case where the mobile station has used the first frequency in the first wireless communications area, and allocates the first frequency to the radio channel after the mobile station travels from the third wireless communications area to the first wireless communications area.

12. A mobile communications system, comprising:

a first base station conducting wireless communications using at least a first frequency;

a second base station conducting wireless communications using at least a second frequency different from the first frequency;

a third base station, located adjacent to said first and second base stations, conducting wireless communications using at least the first and second frequencies;

a first base station controller managing at least the first frequency used in said first and third base stations and the second frequency with respect to said first base station, but does not manage the second frequency with respect to said third base station; and

a second base station controller managing at least the second frequency used in said second and third base stations and the first frequency with respect to said second base station, but does not manage the first frequency with respect to said third base station, wherein each of said first and second base station controllers further comprises controlling means for allocating the same frequency when there is a hand-off between base station devices managed by the corresponding base station controller.

13. The mobile communications system according to claim 12, wherein each of said first and second base station controllers further comprises instructing means for instructing said first base station to use the first frequency when there is a handoff from said third base station to said first base station, and instructing said second base station to use the second frequency when there is a hand-off from said third base station to said second base station.

19. A communications control method in a mobile communications system including a first base station device provided in a first wireless communications area to which at least a first frequency is allocated, a second base station device provided in a second wireless communications area to which at least a second frequency is allocated, a third base station device provided in a third wireless communications area which is adjacent to the first and second

wireless communications areas and to which the first and second frequencies are allocated, a first base station controller controlling the first base station device using the first frequency and a second base station controller controlling the second base station device using the second frequency, wherein

the first base station controller controls communications conducted by the first base station device using the first frequency and the second frequency and controls communications conducted by the third base station device using the first frequency but not controlling communications conducted by said third base station device using the second frequency,

the second base station controller controls communications conducted by the second base station device using the first frequency and the second frequency and controls the communications conducted by the third base station device using the second frequency but not controlling communications conducted by said third base station using the first frequency, and

said first base station controller allocates the same frequency to a radio channel between a mobile station and a corresponding base station device before and after the mobile station travels from the first wireless communications area to the third wireless communications area in a case where the mobile station has used the first frequency in the first wireless communications area, and allocates the first frequency to the radio channel after the mobile station travels from the third wireless communications area to the first wireless communications area.

(ix) Evidence Appendix

No evidence was submitted to or entered by the Examiner during prosecution of this application.

(x) **Related Proceedings Appendix**

Upon information and belief, there are no other appeals or interferences, which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.